1. A voltage recovery device for connection to a utility network which carries a nominal voltage, the voltage recovery device comprising an energy storage unit connected to the utility power network and configured to transfer real and reactive power between the utility power network and voltage recovery device at a sufficient level and for a sufficient duration to recover the voltage on the utility power network to within a predetermined proportion of the nominal voltage, following a fault condition detected on the utility power network.

2. The voltage recovery device of claim 1 wherein the voltage recovery device is configured to transfer a combination of real and reactive power.

3. The voltage recovery device of claim 2 wherein the voltage recovery device is configured to provide real power to the transmission network to promote quick recovery of voltage to within acceptable utility standards within 0.5 seconds.

4. The voltage recovery device of claim 3 wherein the voltage recovery device is configured to provide real and reactive power to the transmission line network to within 0.90 P.U. of the nominal voltage within 0.5 seconds.

5. The voltage recovery device of claim 2 further comprising:

an inverter electrically coupled between the energy

storage unit and the utility power network; and

a controller connected to the inverter and configured to control the amount of real and reactive power transferred between the energy storage unit and utility power network.

6. The voltage recovery device of claim 5 wherein the energy storage unit includes a superconducting magnet.

7. The voltage recovery device of claim 5 wherein the energy storage unit is selected from a group consisting of a flywheel, a battery, a capacitive energy storage system bank, a compressed gas energy source, and a fuel cell system.

8. The voltage recovery device of claim 5 further comprising a magnet interface connected between the energy storage unit and the inverter.

9. A method of stabilizing a utility power network, the method comprising:

electrically connecting a voltage recovery device having an energy storage unit to the distribution network,

detecting a fault condition on the utility power network; and

operating, in response to detecting the fault condition, the voltage recovery device to transfer real power and reactive power to the utility power network at a sufficient level and for a sufficient duration to recover the voltage on the utility power network to within a predetermined proportion of the nominal voltage.

10. The method of claim 9 wherein the utility power network includes a transmission network and a distribution network electrically connected to the transmission network, the distribution network having distribution lines coupled to at least one load, the method further comprising electrically connecting the voltage recovery device to the distribution network.

11. The method of claim 9 further comprising electrically coupling an inverter between the energy storage unit and the utility power network, wherein operating the voltage recovery device including controlling the inverter to control the level of real power and level of reactive power transferred between the energy storage unit and utility power network.

12. The method of claim 9 further comprising configuring the voltage recovery device to provide real power to the transmission network to promote quick recovery of voltage to within acceptable utility standards within 0.5 seconds.

13. The method of claim 9 further comprising configuring the voltage recovery device to provide real and reactive power to the transmission line network to within 0.90 P.U. of the nominal voltage within 0.5 seconds.

14. The method of claim 9 wherein the energy storage

unit includes a superconducting magnet.

15. The method of claim 9 wherein the energy storage unit is selected from a group consisting of a flywheel, a battery, a capacitive energy storage system bank, a compressed gas energy source, and a fuel cell system.

16. A control system comprising:

a memory including at least a portion for storing a computer program for controlling a voltage recovery device electrically coupled to a utility power, the stored program including computer-readable instructions which, in response to an indication of a detected fault, provides control signals to the voltage recovery device to control the transfer of real power and reactive power to the utility power network at a sufficient level and for a sufficient duration to recover the voltage on the transmission network to within a predetermined proportion of the nominal voltage;

a processor to execute the computer-readable instructions; and

a bus connecting the memory to the processor.

17. The voltage recovery device of claim 1, wherein the real power is transferred from the voltage recovery device at a substantially constant voltage for a predetermined period of time.

18. The voltage recovery device of claim 17, wherein, after the predetermined period of time, the real

power is transferred from the voltage recovery device at a substantially constant rate.

19. The method of claim 9, wherein the real power is transferred from the voltage recovery device at a substantially constant voltage for a predetermined period of time.

20. The method of claim 19, wherein, after the predetermined period of time, the real power is transferred from the voltage recovery device at a substantially constant rate.

21. The control system of claim 16, wherein the computer-readable instructions control transfer of the real power such that the real power is transferred from the voltage recovery device at a substantially constant voltage for a predetermined period of time.

22. The control system of claim 21, wherein the computer-readable instructions control transfer of the real power such that, after the predetermined period of time, the real power is transferred from the voltage recovery device at a substantially constant rate.

23. A method of stabilizing a utility power network, the method comprising:

electrically connecting plural voltage recovery devices, each having an energy storage unit, to the

distribution network,

detecting a fault condition on the utility power network; and

operating, in response to detecting the fault condition, one or more of the voltage recovery devices to transfer real power and reactive power to the utility power network at a sufficient level and for a sufficient duration to recover the voltage on the utility power network to within a predetermined proportion of a nominal voltage.